

CLAIMS

What is claimed is:

1. A liquid jetting method for applying a liquid jetted from a nozzle of a droplet jet head to a substrate, comprising the steps of:

dividing a coating region of said substrate into at least two regions;
and

setting a jet amount of the liquid to any one of said at least two regions to a greater value than the jet amount to another of said at least two regions.

2. The liquid jetting method according to claim 1, wherein the jet amount of the liquid to said substrate is varied by one of step-wise variation and continuous variation.

3. The liquid jetting method according to claim 1, wherein the jet amount of the liquid is varied in proportion to a distance from a specific position on said substrate.

4. The liquid jetting method according to claim 1, further including the steps of:

preparing a plurality of droplet jet heads as said droplet jet head; and
applying the liquid to each region to be applied with a different one of said droplet jet heads.

5. The liquid jetting method according to claim 1, wherein the

liquid is applied while said droplet jet head is being moved.

6. The liquid jetting method according to claim 1, wherein a jetting operation of said droplet jet head is controlled in accordance with a distance between said droplet jet head and said substrate and with a moving speed of said substrate relative to said droplet jet head.

7. The liquid jetting method according to claim 1, wherein said droplet jet head has a plurality of nozzles.

8. The liquid jetting method according to claim 7, wherein said plurality of nozzles form a nozzle train, an orientation angle of said nozzle train in an arrangement direction relative to a reference direction on said substrate is varied in accordance with a distance from a specific position on said substrate.

9. A liquid jetting method for applying a liquid jetted from a nozzle of a droplet jet head to a substrate, comprising the step of:

identifying said substrate as a non-circular substrate; and

sequencing a non-jetting time in which the liquid is not jetted with a jetting time in which the liquid is jetted from the nozzle of said droplet jet head.

10. The liquid jetting method according to claim 9, wherein said non-jetting time is synchronized with a time in which said substrate does not

exist at a jetting position of the nozzle of said droplet jet head.

11. The liquid jetting method according to claim 9, further including the step of diffusing the liquid in a predetermined direction after the liquid is jetted from the nozzle of said droplet jet head and is applied to said substrate.

12. A liquid jetting apparatus for jetting a liquid to be applied to a substrate, comprising:

a droplet jet head having at least one nozzle; and

a jet amount control means for controlling a jet amount of the liquid from said nozzle so that the jet amount of the liquid to any one of at least two divided regions of a liquid coating region of said substrate is greater than a jet amount to another one of said at least two divided regions.

13. The liquid jetting apparatus according to claim 12, wherein said at least one nozzle further comprises a plurality of nozzles, said nozzles are arranged in a line to constitute a nozzle train, and an orientation angle of said nozzle train in an arrangement direction relative to a reference direction on said substrate varies in accordance with a distance from a specific position on said substrate.

14. A liquid jetting method for applying a liquid jetted from a nozzle of a droplet jet head to a substrate comprising the steps of:

rotating said substrate by a spin coater;

dividing a coating region of said substrate into at least an inside circumferential region and an outside circumferential region positioned at predetermined distances from a center of rotation of said substrate; and

setting a jet amount of the liquid to said outside circumferential region to a greater jet amount than a jet amount of the liquid to said inside circumferential region.

15. The liquid jetting method according to claim 14, wherein the jet amount of the liquid to said substrate is varied by one of step-wise variation and continuous variation from the center of rotation of said substrate outwardly.

16. The liquid jetting method according to claim 14, wherein the jet amount of the liquid is proportional to a distance from the center of rotation of said substrate.

17. The liquid jetting method according to claim 14, further including the steps of:

preparing a plurality of droplet jet heads as said droplet jet head; and

applying the liquid to said inside circumferential region and said outside circumferential region with different droplet jet heads.

18. The liquid jetting method according to claim 14, wherein the liquid is applied while said droplet jet head is being moved.

19. The liquid jetting method according to claim 14, wherein the jetting operation of said droplet jet head is controlled in accordance with a distance between said droplet jet head and said substrate and with an angular velocity of said spin coater.

20. The liquid jetting method according to claim 14, wherein said droplet jet head has a plurality of nozzles.

21. The liquid jetting method according to claim 20, wherein said plurality of nozzles form a nozzle train and an orientation angle of said nozzle train in an arrangement direction relative to a radial direction of said substrate is varied in accordance with a distance from the center of rotation of said substrate.

22. A liquid jetting method for applying a liquid jetted from a nozzle of a droplet jet head to a substrate comprising the step of:
identifying said substrate as a non-circular substrate;
rotating said non-circular substrate by a spin coater; and
sequencing a non-jetting time in which the liquid is not jetted with a jetting time in which the liquid is jetted from the nozzle of said droplet jet head.

23. The liquid jetting method according to claim 22, wherein said non-jetting time is synchronized with a time in which said non-circular substrate to be coated with the liquid does not exist at a jet position of the

nozzle of said droplet jet head.

24. A liquid jetting apparatus for jetting a liquid applied to a stationary or rotating substrate, comprising:

a droplet jet head having at least one nozzle;

a spin coater for rotating said substrate; and

a jet amount control means for controlling a jet amount of the liquid from said nozzle so that the jet amount of the liquid to an outside circumferential region of a liquid coating region of said substrate is greater than a jet amount of the liquid to an inside circumferential region positioned at predetermined distances from the center of rotation of said substrate.

25. The liquid jetting apparatus according to claim 24, wherein the droplet jet head has a plurality of nozzles arranged in a line to constitute a nozzle train, and an orientation angle of said plurality of nozzles in an arrangement direction relative to a radial direction of said substrate varies in accordance with a distance from the center of rotation of said substrate.

26. An electro-optical apparatus substrate production method for producing a substrate having a layer of electro-optical material thereon, comprising:

a liquid jetting step of applying a liquid jetted from a nozzle of a droplet jet head to said substrate;

wherein a jet amount of the liquid to any one of at least two divided regions of a coating region of said substrate is greater than a jet amount to

another of the at least two divided regions.

27. The electro-optical apparatus substrate production method according to claim 26, wherein said liquid is at least one of an electro-optical material and a resist material used for a photolithography process.

28. An electro-optical apparatus substrate production method for producing a substrate having a layer of an electro-optical material on a substrate, comprising:

identifying said substrate as a non-circular substrate;

a liquid jetting step of applying a liquid jetted from a nozzle of a droplet jet head to said substrate; and

a step of sequencing a non-jetting time in which the liquid is not jetted with a jetting time in which the liquid is jetted from the nozzle of said droplet jet head, in said liquid jetting step.

29. The electro-optical apparatus substrate production method according to claim 28, wherein said liquid is at least one of an electro-optical material and a resist material used for a photolithography process.

30. An electro-optical apparatus production method for producing an electro-optical apparatus including a substrate having a layer of an electro-optical material thereon, comprising:

a liquid jetting step of applying a liquid jetted from a nozzle of a droplet jet head to said substrate;

wherein a jet amount of the liquid to any one of at least two divided regions of a coating region of said substrate is greater than a jet amount to another of the at least two divided regions.

31. An electro-optical apparatus production method for producing an electro-optical apparatus including a substrate having a layer of an electro-optical material thereon, comprising:

identifying said substrate as a non-circular substrate;

a liquid jetting step of applying a liquid jetted from a nozzle of a droplet jet head to said substrate; and

a step of sequencing a non-jetting time in which the liquid is not jetted with a jetting time in which the liquid is jetted from the nozzle of said droplet jet head, in said liquid jetting step.

32. The liquid jetting method according to claim 1, further including the step of diffusing the liquid in a predetermined direction after the liquid is jetted from the nozzle of said droplet jet head and is applied to said substrate.